



## SPECIFICATION

### TITLE OF THE INVENTION

(0001) Pendulous Mobile Animal Amusement/Exercise Apparatus

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### CROSS-REFERENCE TO RELATED APPLICATIONS

(0003) This application claims the benefit of U.S. Provisional Application No. 60/423,429 filed November 4th, 2002.

### STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not Applicable

### REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER

### PROGRAM LISTING COMPACT DISK APPENDIX

Not Applicable

### BACKGROUND OF THE INVENTION

(0004) The present invention relates generally to amusement/exercise devices developed for animals that hunt or play; including, but not exclusively for cats and dogs and pertains more particularly to, erratic mobile type devices intended by action to retain the interest and interaction of the animal for extended periods of time, thereby providing them amusement and exercise.

- (0005) An abundant variety of contrivances designed to amuse and exercise animals particularly pets such as cat and dogs, exists in prior art. This in itself demonstrates the need for such devices. It is also clear that the desired action of devices developed for this objective, be capable of producing complex, erratic and substantially prolonged three dimensional target movements.
- (0006) Such contrivances may include a range of complicated electro-mechanical machines to devices as simplistic as a suspended elastic cord and with target attached. They can be multifaceted and elaborate and may include motors and driver circuits, gears or pulleys, incorporating motion sensors and the like, requiring batteries or other forms of electromotive force to function. These involved machines may have the capacity to produce the desired qualities of action, however they inherently emit unnatural sounds that can frighten or repel the animal.
- (0007) A number of the more basic relatively silent assemblages presented in prior art, may include devices such as an elastic cord attached to a suspended clamp of sorts, and are physically incapable of producing any notably sustained or prolonged erratic target movement.
- (0008) Other more complex mobile type devices may include one or more tethered ballasted rods or shafts that generally, as a requirement of function; are suspended at a height that is in the way of, and poses a potential injury hazard to, persons passing through the area.
- (0009) A number of these devices require human manipulation to function. Although person/pet interaction is a positive feature, the requirement of human manipulation is limiting in nature, as it restricts device activity to the persons scheduling.
- (0010) Accordingly, the need exists in the industry to address the aforementioned deficiencies and inadequacies.

## BREIF SUMMARY OF THE INVENTION

- (0011) It is an object of the present invention to provide an apparatus for the amusement and exercise of animals that hunt or play, including pets such as cats and dogs.
- (0012) Additionally it is an object of the present invention is to provide a device capable of producing the aforementioned desirable target movements without the need for noisy complicated machinery or human manipulation.
- (0013) Another object of the present invention is to provide a device that even though does not require human manipulation, does allow for human interaction with both device and animal when so desired.
- (0014) Still another object of the present invention is to provide a device that is suspended from above, up out of the way, of persons passing through the area.
- (0015) In fulfillment of the aforementioned objectives among others, the present invention is provided, adapted in the manor of a suspended gravitationally responsive animal actuated pendulous mobile apparatus inherently facilitating complex, erratic and substantially prolonged three dimensional target movements that vary in both tempo and bearing.
- (0016) Further, the novel features and advantages of the present invention may be more clearly understood by reference to the subsequent written description of preferred embodiments in conjunction with the accompanying drawings.

## BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

- (0017) All drawings, as furnished, encompass preferred embodiments of best mode as contemplated and practiced by the inventor.

**NOTE:** In **FIG. 1** through **FIG. 3** the item labeled **100** is representative of the device or structure, of the apparatus inclusive of all components exempt only of elements **8** and **9**.

**FIG. 1** is a schematic view of one embodiment of the present invention illustrating relative movement and a sample application.

**FIG. 2** is a static elevational side view of one embodiment of the present invention.

**FIG. 3** is a static elevational rear view of device **100** of the embodiment of the present invention, illustrated in **FIG. 2**.

**FIG. 4** is an enlarged sectional view of end portion **27** of shaft **3** of the embodiment of the present invention, illustrated in **FIG. 2**.

**FIG. 5** is an enlarged sectional view of end portion **11** of shaft **1** of the embodiment of the present invention, illustrated in **FIG. 2**.

**FIG. 6** is an enlarged exploded side view of end portion **18** of shaft **2** of the embodiment of the present invention, illustrated in **FIG. 2**.

#### DETAILED DESCRIPTION OF THE INVENTION

(0018) Exemplary embodiments of the present invention are hereinafter described in detail in conjunction with the aforementioned drawings.

(0019) **FIG. 1** illustrates a sample application including the relative movement of device **100** and will be best understood and described in detail following the presentation of the features illustrated by **FIG. 2** through **FIG. 6** of the drawings.

In reference to **FIG. 2**, shafts **1**, **2**, **3** and central union **5** are of a relatively low mass, rigid material united by suitable means. Upper shaft **1** begins at, is secured to, and inclines away from central union **5** extending to distal end **4**. Lower shaft **2** begins at, is secured to, and declines away from central union **5** extending to distal end **6** bearing away shafts **1** and **3** as illustrated. Shaft **3** begins at, is attached to, and extends away from central union **5**, to distal end **7** bearing away from shaft **1** and **2**.

- (0020) The entire apparatus is suspended from above via an appropriate support medium **17** secured to pivot mechanism **13** affixed to end portion **11** of shaft **1**. Support medium **17** in conjunction with pivot mechanism **13** must incorporate characteristics designed to minimize any horizontal deflection of distal end **4** of shaft **1**, away from the vertical axis of the peak of suspension.
- (0021) A finite length of resilient flaccid cord **8** of apposite form and dimension is attached by one free end and by suitable means to shaft **3** at distal end **7**, extending vertically downward terminating proximate the floor or ground **G** (see **FIG.1**). An object **9**, of relatively low mass and appropriate dimension is secured to cord **8** in proximity to the lower unbound terminate end of cord **8** at an appropriate height. Object **9** hereinafter is referenced solely as target **9**, represents the toy/target of the apparatus. Cord **8** and target **9** as attached to device **100**, form a reciprocal actuator medium utilized to activate the apparatus and may be of adapted form as to suite the play or hunting characteristics of the particular animal breed that it is intended to attract.
- (0022) Continuing with **FIG.2**, a load member **20** of appropriate mass in suitable form is obstinately attached to lower shaft **2** in proximity of distal end **6**. Load member **20** is of sufficient mass as to present apposite gravitational bias through the structure **100** to support the weight of attached cord **8** and target **9**, while effectively positioning shaft **3** in an approximate horizontal attitude as illustrated.
- (0023) Best mode as contemplated and carried forth by the inventor is declared as follows. Shafts **1**, **2**, and **3** along with central union **5** are combined into a rigid one piece injection molded polymeric unit of configuration as depicted in **FIG. 2** and **FIG.3**.
- (0024) Excluding end portion **18** of shaft **2**, each of the three shafts is of a small diameter, amalgamating at central union **5**. Shafts **1** and **2** are of similar length. Shaft **3** is of lesser length than that of **1** and **2**.

(0025) **FIG. 4** demonstrates the preferred embodiment employed to secure resilient cord **8** to distal end **7** of shaft **3**. Cavity **26** is molded into end portion **27** of shaft **3**. A smaller diameter hole **28** is provided thru distal end **7** into opening **26**. One free end of cord **8** is passed from distal end **7** thru hole **28**, out opening **26**. A knot **29** is formed in said protruding free end of cord **8** so that it is larger than the diameter of hole **28**, but smaller than opening **26**. Cord **8** is pulled back through hole **28** until knot **29** recedes into cavity **26**, thereby securing cord **8** in the previously described location in addition to concealing knot **29** within opening **26**. This feature also provides means for altering the overall length of cord **8** to suit the individual height variations of different installation locations.

(0026) Target **9** is securely attached by appropriate means and is of adapted form, as previously described.

(0027) **FIG. 5** illustrates the form and manner of pivot mechanism **13** implemented in the preferred embodiments of the present invention. Cavity **10** is molded into end portion **11** of shaft **1**. A smaller diameter hole **12** is installed thru distal end **4** of shaft **1** into opening **10**. A length of flaccid robust cord **14** of suitable material and dimension is fashioned into a closed loop **15** by tying together the two distal ends of cord **14** into knot **16** and positioning it opposite the loop end **17**. Knot **16** is of smaller dimension than opening **10** and larger than the diameter of hole **12**. Loop end **17** is inserted into opening **10** passed through hole **12**, out distal end **4** of shaft **1**. The loop end **17** is pulled thru to the point at which knot **16** is fully inserted into and concealed within opening **10**. Hole **12** is of large enough diameter as to allow the two strands of cord **14** that make up loop **15** to twist freely about each other within end portion **11** of shaft **1**, thereby permitting the entire unit to swivel.

(0028) Closed loop **15** with loop end **17** now protruding from distal end **4**, has a three fold purpose in that it furnishes rotational and swing capacities as well as providing a support medium utilized to suspend the device from above.

(0029) **FIG. 6** depicts the form and manner preferred to attach a load mass **20** proximate distal end **6** of shaft **2**. Inside end portion **18** of shaft **2** cavity **19** is provided and is of necessary dimension as to allow load member **20** to be inserted fully within. Collar **21** is of proper dimension to allow cavity **22** of end cap **23** to slide snugly over it into position whereby edge **24** and **25** fit securely together, thereby enclosing load member **20** within end portion **18** of shaft **2**. Cap **23** is secured by appropriate means.

(0030) Referring back to **FIG. 1**, a pendulous mobile animal amusement and exercise apparatus is provided, comprised of suspended device **100**, with attached resilient cord **8** and target **9**. When the animal **A** tugs on resilient cord **8** or target **9** the applied torque is transferred through device **100** to structure **S**. As structure **S** is unyielding the applied torque is reflected back through the assembly effecting swinging movement of the entire apparatus, causing enclosed load mass **20** to rise against the pull of gravity. The gravitational forces exerted on load member **20** inherently reciprocate through the structure **100** in opposition to any force exerted on resilient cord **8**. This effect engages the animal with the sensation of the cord **8** and target **9** tugging back. As the animal releases said elements, the gravitational forces exerted on enclosed load mass **20** inherently strives to return structure **100** to its static position, thereby causing it to swing to and fro and/or side to side for an extended period of time; as well as freely rotating up to and beyond 360 degrees in either direction along an approximate horizontal plane. As attached cord **8** and target **9** present a measurable mass and are free to swing about three dimensionally, the gravitational force exerted on them being in opposition to the gravitational force exerted on load member **20**, has the effect of causing the device **100** to rotate and flip about in an erratic manor. Correspondingly device **100** now in motion, transfers its inertial force, back to cord **8** and target **9**, substantially sufficient to provide prolonged action motion to said elements in a manner of chaotic vertically directional and horizontally directional three-dimensional movements, thereby increasing the attraction capacity of same to the animal.

(0031) While the inventor has fully disclosed and laid illustration to the preferred embodiments of the present invention it is exemplary and not intended that it be limiting thereby and that certain modifications of features thereof may be introduced without departing from the true spirit and scope of the invention.